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ABSTRACT

An attempt is made to clarify the language of the Adult Education Act of 1966 to yield operational criteria for identifying its goals within a needs assessment/treatment framework. Criteria for general and special target populations are set forth. Singled out are the group of those with four or less years of formal education and those determined to be the least educated and most in need (based on last grade completed, age, race/ethnicity, and economic status). Estimates of the sizes of Pennsylvania's target populations are made. Target and non-target populations are compared on the basis of sex, age, race, last grade attended, occupational group, major activity, and comparison of family income to poverty. In the second section target population trends, Adult Based Education (ABE) program participation, and ABE program demand and resource allocation are examined. Conclusions are presented based on the data: there has been an increase in the age and decrease in the size of Pennsylvania's ABE population, demand for ABE programs is about half that for all adult educational activities, and ABE program enrollment would probably increase were it not artificially controlled by the 20 per cent funding restriction for high school equivalency programs. The author contends that empirical criteria, information on data sources, and guidelines for target group identification should be developed at the federal level for use by the states. (MN)

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A CONCEPTUAL AND DATA-BASED ANALYSIS OF PENNSYLVANIA'S ADULT BASIC EDUCATION TARGET POPULATION

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Planning Studies in Continuing Education

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June, 1980

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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INTRODUCTION

Federal assistance for adult basic education began with the Economic Opportunity Act of 1964, the legislation which begat what is now referred to as the "war on poverty." Two years later, the authority for the adult education functions of this Act were transferred to the U.S. Office of Education under Title III of the Elementary and Secondary Education Act. Subsequent amendments, the most recent being the Adult Education Act passed November 1, 1978, have modified the Act's target populations, but the basic purpose has been essentially unchanged:

> It is the purpose of this title to expand educational opportunities for adults and to encourage the establishment of programs of adult education that will--
>
> (1) enable all adults to acquire basic skills necessary to function in society,
> (2) enable adults who so desire to continue their education to at least the level of completion of secondary school, and
> (3) make available to adults the means to secure training that will enable them to become more employable, productive, and responsible citizens."
>
> (Sec. 301, The Adult Education Act, P.L. 95-561)

In spite of the Act's seemingly straightforward statement of purpose, the fifteen year history of the adult basic education program has been filled with confusion regarding a coherent definition of what the Adult Education Acts are intended to accomplish and has spawned a plethora of tentative reports on the program's success. As the National Advisory Council on Adult Education (NACAE) put the matter in an unanswered question, "Do the policy statements and guidelines emanating from federal law emphasize the teaching of literacy as a prerequisite

for job training, or do they relate to the more comprehensive goal of creating a broad base of general education to undergird total life responsibility?" (NACAE, 1974, p. 83). A more recent report on an assessment of Pennsylvania's ABE[1] program noted:

> The Adult Basic Education (ABE) program of the Commonwealth of Pennsylvania necessarily reflects some of the ambiguity of the national philosophy in which it is grounded. Hence, no simple, direct, and quantitative report of activities can adequately express the degree of effectiveness or level of goal attainment perceived by the program's different constituencies. As a direct consequence of such ambiguity, one of the major recommendations of this report is the encouragement of more explicit identification and specification of program target populations, goals, and activities (Lindsay et al., 1976).

Reporting on the effectiveness of the national ABE program in 1978, the National Advisory Council on Adult Education Program Effectiveness and Evaluation Committee took nearly a full page to describe the limitations on enrollment data collected from the state programs (NACAE, 1978, p. 25). Three years earlier, a report to the Congress by the Comptroller General of the United States had provided a critical review of the national ABE program from a federal perspective (Comptroller General, 1975). A review of subsequent USOE activities and this report, "The Adult Basic Education Program: Progress in Reducing Illiteracy and Improvements Needed," reveals that all of its recommendations were addressed by the Office of Education and have been implemented with varying degrees of success. The 1975 report also included two primary

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[1] In line with common usage, this paper refers to the entire program authorized by the Adult Education Act as the Adult Basic Education Program.

recommendations to Congress concerning the Adult Education Act. The first, to eliminate the restriction that adults with high school diplomas be prohibited from participating in the ABE program if they are functioning below that level, was incorporated in the 1978 Act. The second, to revise the formula for allotting funds to states to permit recognition of the priority and high costs of reaching adults functioning at the lower grade levels, is not in the Act or the Act Regulations to date.

It seems clear that both of these recommendations to Congress stem from concern with identifying the target populations for the Adult Education Act:

> To know the dimensions of the problem the [ABE] program is addressing, it is necessary to identify the target population. An accurate assessment of the target population can give management (1) the basic information to obtain and allocate needed resources and (2) a standard for measuring program progress and effectiveness (Comptroller General, 1975, p. 20).

Furthermore, it appears that at least part of the impetus for changing eligibility for the Adult Education Act, and a concern for clarifying the Act's target populations, came from the competency-based movement for adult basic education which was beginning about the time the report was published in 1975. The report states, ". . . Census figures may not be a good indication of the size of the actual target population," and notes approvingly, "Through a special project, OE is attempting to better define 'functional literacy,' to provide a more reliable basis for identifying the adult basic education target group" (Comptroller General, 1975). Even though it has generated a great deal

of publicity, the impact of the Texas Adult Performance Level (APL) project (to which the Comptroller General's report referred) in identifying the ABE target population is still moot five years later.

Despite these problems with the ABE program, it is not the purpose of this paper to extend the litany of criticisms to the national level or even to the State of Pennsylvania, or to offer an assessment of the effectiveness of the ABE program. Rather, the rationale for this brief review is to provide a context for examining the clarity and feasibility of the Adult Education Act's requirements for identifying and serving its target populations. More specifically, this paper will (1) examine and make explicit the inter[illegible]f the goals of the Adult Education Act within a needs assessment/treatment framework, (2) attempt to clarify the federal or jurisdictional definition of the target population eligible for the services of the Adult Education Act, (3) based on this conceptual analysis of the Act, apply the definitional criteria for the Act's target populations to a 1976 U.S. Census data set to obtain more recent estimates of the size and overlap of the identified target populations, and (4) present comparative profiles of target and non-target populations using selected demographic characteristics. A concluding section of this paper will discuss these findings and present some additional analyses regarding a demand population for adult basic education.

MEANINGS AND APPLICATIONS OF THE CONCEPT OF NEEDS

At the conclusion of his one-day seminar on needs assessment in June, 1979, Michael Scriven summarized the information presented with a good news/bad news joke: "The good news is that needs assessment stuff is no good. The bad news is that there is no further help at this time" (Scriven, 1979). Although his summary is not a good joke and nobody laughed, his assessment is not far off the mark. Nevertheless, an understanding of the concept of need and how the term is used are prerequisite to understanding the intent of the Adult Education Act, and form a starting point for the analysis undertaken by this paper.

Needs and Needs Assessment

Since there are so many federal requirements and claims for needs assessment (Kimmel, 1977), including the Adult Education Act, one might conclude that this process is straightforward. It is not. In fact, because the meanings of needs and needs assessment are so vague and variable, this area of research and application has been referred to as a "semantic jungle" by Varenais (1977), who recommended that it "be struck" from the human services vocabulary.

However common it is, the concept of need is very troublesome. A large share of the literature and practically all legislation requiring that needs be assessed (again, the Adult Education Act is no exception) do not bother to discuss or attempt to define the word. The meaning is assumed to be clear and obvious.

Need is a word with variable meanings because it does not have a specific referent. It is context-bound and relative. A need does not refer to something in particular, but rather to something which does not exist:

> Need. . . A lack of something useful, required, or desired, to have need of rest . . . . a condition in which there is a deficiency of something . . . a condition of poverty or extreme want (Second College Edition, New World Dictionary, p. 951).

One of the few definitions consistent with the open-ended characteristic of human services vocabulary is the following:

> A human need is any identifiable condition which limits a person or individual or a family member in meeting his full potential . . . which is usually expressed in social, economic or health-related terms and are frequently qualitative statements (Human Services Institute, 1975).

Thus, the typical definition of need, when it is stated, is basically an empty term without conceptual boundaries.

A diagnostic definition. To move closer toward an acceptable definition of need, a connection must be made between need, which is a lack or deficit, and the remedy or treatment which will satisfy the condition of need. Scriven's (1979) diagnostic definition of need makes this connection explicit. Under the diagnostic definition, a need is a factor without which an entity would (does) not function (perform) satisfactorily. This is a treatment-based definition and function or perform is the operating word. This definition is more easily understood when applied to the example of a person's need for vitamin C, the prescribed treatment for the cure or prevention of scurvy. Vitamin

C is the factor without which a person does not function satisfactorily because of the condition or disease, scurvy. To say that a person needs vitamin C (need and treatment are synonymous) is to say that a person is functioning at less than a satisfactory level without it.

Concepts of social needs. Human service agencies exist to serve social needs, but in a particular situation it is often not clear what is meant by a social need. When a statement is made, as it often is, that a group of persons is in need of a given service, what definition is implied? Bradshaw (1972) distinguishes four types of social need definitions which help clarify the concept.

1. Normative need is based on expert opinion in which desirable or satisfactory standard is laid down and compared to that which exists. If individuals or groups do not meet the established standard, they are identified as being in need. Nutritional standards and the vitamin C example of a treatment need are normative standards for defining needs.

There are several problems with normative need standards; e.g., they are in no sense absolute, they may be paternalistic, they involve value judgments, and they may change in time. Nevertheless, normative standards are widely used, particularly with federal legislation aimed at disadvantaged

groups in our society.

2. Felt need is equated with want; people are asked what they want. Felt needs are limited by the individuals' perceptions, including their knowledge that a service is available and their reluctance to confess a need.

3. Expressed need or demand is defined as felt need turned into action. Expressed need in the human service area is commonly assessed by waiting lists.

4. Comparative need refers to assessment of need by examining the characteristics of those in receipt of a service. If people with similar characteristics are not in receipt of that service, they are considered to be in need. Aside from the assumptions made by this definition, questions concerning level of services to be provided are unanswered.

Although all four of these definitions or types of social needs have been used in the human services literature for defining target populations, the most common one, either implicity or explicity, is the normative model. Furthermore that the Adult Education Act implicitly adopts the normative approach to defining its target populations.

However, the Act is mute on what a need is or how needs are to be related to treatments.

An explication of the needs assessment/treatment paradigm, inferred from the Adult Education Act, will conclude this discussion of the concept of needs. This paradigm then will be used in the following section for a data-based analysis of the Act's target populations.

A Needs Assessment/Treatment Paradigm for the Adult Education Act

As with most federal legislation intended to alleviate social needs, the Adult Education Act neither explicitly defines what needs are nor makes a direct connection between needs and program services or treatments. These definitions and relationships, which can be thought of as a need/treatment paradigm, must be inferred from the language of the Act. The following discussion is an attempt to cast pertinent statements from the Act into this paradigm.

By definition, the treatment for social needs under the Adult Education Act is the programs and services provided by agencies who contract with the state offices of adult education. The bases for the social need, or the deficits in function to be remedied by the treatment, are not so obvious, however. The deficits seem to be education-based, but a definition of need, using education as the condition to be improved is tautological: a normative definition of social need, based on education, is the difference between a prescribed or satisfactory educational level and the current educational level.

Such a definition is empty because it does not refer to the deficit in performance that the need is causing. This problem can be solved if a normative/diagnostic definition of social need is used.

At a generic level, the normative/diagnostic definition of social need implicit in most federal legislation aimed at disadvantaged groups would read as follows: a social need is the difference between the current and a prescribed and/or satisfactory level of functioning (generally economic or socioeconomic based) which can be improved or alleviated by the application of the federal program or treatment. Needs are established by applying criteria, which may be educational or economic, to define a group or population deemed to be in need.

The following definition, with minor modifications, seems to be the needs assessment/treatment paradigm implied by the Adult Education Act: a need is the difference between a prescribed and/or satisfactory level of economic and social well being and the current or actual functioning levels of identified groups. The difference in functioning can be reduced by applying ABE program services (treatments) to individuals or groups who meet the criteria for defined need. These criteria are based on educational or functional competency criteria applied to the general adult population sixteen years of age and older. Those who meet the criteria are identified as the target population and hence deemed to be in need of the ABE program treatment. A strong inference is also made that the lower the educational level or functional competency of individuals, the greater their need for ABE program services.

PENNSYLVANIA'S ADULT BASIC EDUCATION TARGET POPULATION

The preceding section concluded that the language of the Adult Education Act implies a normative, diagnostic needs assessment/ treatment paradigm for defining needs to be met by the program services authorized by the Act. Put simply, the goals of the Act are to increase the educational, social, and economic levels of the Act's target populations. Thus it is implied by the Act's purposes that the target populations need services. Indeed it is explicitly stated in Section 306, which addresses state plans, that, "A state plan under this act shall identify the needs of the population for services under this title." However, no guidance for conducting a study to identify needs is offered by either the Act or the recently approved Regulations.

As we have seen under the normative definition of social needs embraced by the Adult Education Act, the identification of the target population is tantamount to conducting a needs assessment study. Therefore, applying the criteria for identifying the Act's target populations to a general adult population is prima facie justification, from a jurisdictional point of view, for a normative-based needs assessment. However, as we have seen, the normative approach to needs assessment fails to take into account the perceived needs of individuals and the potential demand for adult education services. More is said on this point following an analysis of Pennsylvania's ABE target population.

The following analysis is in two parts. First, an attempt is made

to clarify the language of the Adult Education Act and its proposed regulations to yield operational criteria for identifying the adult basic education population. Then these criteria are applied to a 1976 U.S. Census data set based on Pennsylvanians residing in households.

Criteria for Target Population Identification

General adult basic education population. The criteria for defining the general ABE population are not explicitly stated in the language of the Act. This lack of specificity can be seen as either an indication of the flexibility of the act, or as an inherent problem which can lead to difficulties in estimating the size of the population to be served. A careful reading of the Act and review of extant information about criteria from NACAE publications reveals the following criteria which are used by this study. Those included in the target population:

1. are 16 years or older.
2. do not have a certificate of graduation from a secondary school (or lack sufficient mastery of basic educational skills to enable them to function effectively in society).
3. are not currently required to be enrolled in schools.
4. may have limited English proficiency. This criterion also is used to identify a special target population (Section 306, paragraph 11). However, because this group is smaller in Pennsylvania than

in some of the other larger states, it was included with the general ABE population.

Least educated and most in need target population. In a recurring theme, the Final Rules for the Adult Education Act (Federal Register, April 3, 1980) state that the most important objective of the Act is "to provide adult basic education for those who are least educated and most in need." In keeping with their lack of specificity, the Proposed Rules offer no guidance as to how this group is to be identified. However, a recent unpublished paper by the United States Office of Education, Bureau of Occupational and Adult Education, attempts to define the "least educated and most in need" group and to suggest how the states can determine how well they are being served (USOE, 1979). This paper, which is still in draft form, is used as the basis for estimating the "least educated and most in need" group for Pennsylvania.

Based on a regression analysis of the data set generated by the national APL study conducted in 1974 (Northcutt, 1977), the USOE paper identifies four weighted variables for defining membership in the least educated and most in need ABE target population. These variables, their relative weights, and selection cut off scores are shown below.

Variable	Weight	Selection Cut Off
Last grade completed	60	8 years or fewer
Age	9	55 years or older
Race/Ethnicity	16	Non-white
Economic	15	Poverty level income or lower
Total	100	

For planning or target population identification, the USOE paper suggests that those individuals who have any combination of these four variables, the combined weights of which total 75 or more, should be considered members of the least educated and most in need special target population. This model and definition of the least educated and most in need advanced by the USOE paper was used to obtain estimates of the size of this special target population for Pennsylvania.

Low educational attainers. To provide a context for examining the USOE-defined least educated and most in need population, another special target population was identified. It is called the low educational attainers and was defined as a subpopulation of the general ABE target population, the members of which had completed four years or less of formal education.

Estimates of the Size of Pennsylvania's ABE Target Population

Using criteria from the preceding discussion, this section presents estimates of the sizes of Pennsylvania's general ABE target population and two previously-described special target populations. It also presents an estimate of the size of the general ABE target population based on Adult Performance Level (APL) criteria and identifies the extent of the overlap achieved by defining the general target population using the APL competency-based target population definition and the jurisdictional definition found in the Adult Education Act. A description of the two data sources used for these analyses is given, followed by the data.

Data Sources. The first data set is the 1976 Survey of Income and Education (SIE) conducted by the Bureau of Census (U.S. Bureau of Census, 1977). This survey was authorized by Congress to provide statistically reliable estimates, on a state-by-state basis, of the number of children living in families with incomes below poverty. Data from the 1976 SIE represent recent information on individuals residing in households which is more likely to provide accurate estimates of the Act's target populations than the frequently cited, but outdated, 1970 Census figures. The Survey contained questions relating to current employment, past work experience, income, educational background, school enrollment, and standard demographic factors. Unlike a complete census, the population estimates obtained by a survey are subject to sampling error; the level of sampling variability reported for the Pennsylvania

SIE Survey is approximately 7.8 percent for estimates of larger subpopulations. It is larger for smaller subpopulations, where the figure of 10 to 15 percent can be used.

The second data source for the competency-based target population estimates is provided by the 1979 Needs Assessment of Adult Basic Competencies in Pennsylvania (Northcutt, 1979). This study was conducted by the Southwest Educational Development Laboratory under the direction of Norvell Northcutt. While estimates of the sampling error are not clearly specified, they are judged to be somewhat higher than those reported for the SIE Survey.

General and special ABE target populations. The U.S. Census Bureau Survey of Income and Education estimated a total population of 11,670,000 Pennsylvanians living in households in 1976. Of this total 8,681,000, or 74 percent, were age sixteen or older. The previously described criteria for defining Pennsylvania's general and two specific ABE populations were applied to the SIE sample of 9,779 adults representing the 8,681,000 adults sixteen or older. The results of this analysis are shown in Table 1.

An estimated 2,721,000 Pennsylvanians were identified as members of the general ABE target population, representing 31 percent of all adults age sixteen or older. The two special target populations range in estimated size from 126,000 for the low educational attainers to 172,000 for the least educated and most in need. The first group represents 1 percent of the total adult population and 4 percent of the general ABE target population, while the latter group represents 2 percent and 6 percent, respectively.

Table 1

Size and Penetration of Pennsylvania's
General ABE and Special Target Populations

Population	Number (000)	Penetration[1] Total Adult	Penetration[1] General ABE
Total Adult	8,681	100	—
General ABE Target	2,721	31	100
Special ABE Target			
Low Educational Attainers[a]	126	1	4
Least Educated and Most in Need[b]	172	2	6

Source: U.S. Bureau of the Census, 1977.

1 - Percentage of Total Adult and General ABE populations represented by the Special Population.

a - Completed grades 1-4 or less.

b - See text for definition.

Both of the special target populations are relatively small subsets of the general ABE target population. In fact, the size of the least educated and most in need group fell below the initial expectations of the writer. However, when it is recognized that the least educated and most in need population can be no larger than the group who completed eight grades or less, about 532,000 or 19 percent of the general ABE target population, as shown in Table 3, the obtained estimate becomes understandable. In fact, the USOE definition of this group, centering on age, income, and ethnicity, as well as educational level, is a restrictive one. This point is illustrated by the lack of overlap, discussed below, between the two special target populations: the low educational attainers group and the least educated and most in need.

Initially, one might postulate that most of those who completed four years or less of formal education would be included in the USOE least educated and most in need group, which is drawn from adults who completed eight years or less of formal education. However, an analysis of the overlap of these two groups showed that only 43,000, or 33 percent of the low grade level attainment group, were included in the second group. In other words, 84,000 of the 126,000 total low educational grade attainers were not included in the least educated and most in need group. The reason is apparent; two thirds of the low educational attainers failed to satisfy one or more of the remaining three criteria (age, ethnicity, and income) to meet the criterion score of 75, even though they had an initial score of 60 for educational level. In view of this analysis, the USOE may wish to reconsider its preliminary definition of the least educated and most in need ABE target

population, which is deemed so important by the Adult Education Act Regulations.

Jurisdictional vs. competency-based estimates. Since both jurisdictional, as specified by the law or by fiat, and competency-based approaches are implied as criteria by the Adult Education Act for defining the Act's target groups, it was decided to compare the two methods. The intent was to obtain estimates of the size of the general ABE target populations for each approach and to compare their "match" or agreement in classifying the total adult population as being members or non-members of an ABE target population.

The data set produced by the Northcutt (1979) assessment of adult functional competencies in Pennsylvania was used for this analysis. Adults who were classified as APL 1 (least competent) were included in the competency-based target group, while adults who met the jurisdictional criteria described earlier were included in the jurisdictionally-based target population. This analysis is akin to applying two criteria to the same population for defining, for example, sex, using length of hair and voice quality, and comparing the number classified as either male or female by each definition and the total so classified under both definitions.

Table 2 presents the comparison of jurisdictional and competency-based estimates of Pennsylvania's ABE general target populations. The relationships shown in Table 2 are more important than the numbers; the

Northcutt data set estimated a total adult population age sixteen or older of about 8,122,000, while the SIE projection is 8,681,000, some 500,000 more. Using the Northcutt data set, the competency-based definition (APL 1) produced a slightly higher estimate of the general ABE target population (30 percent) than did the jurisdictional definition (27 percent). Both of these estimates are very close to the 31 percent estimate obtained from the 1976 SIE Survey data set. In fact, all three estimates fall well within the sampling error for the two data sets and hence cannot be judged to be significantly different. Of equal importance is the finding that both methods produced a "match" or agreement of 75 percent. This number is obtained by adding the 16 percent of the total adult population classified as target group members by both definitions, to the 59 percent, who were classified as non-target group members, likewise by both definitions.

Selected Demographic and Economic Characteristics of Target and Non-Target Populations

From the vast number of demographic and economic variables contained in the 1976 SIE survey, seven were chosen to compare Pennsylvania's general ABE target and non-target populations. This comparison is summarized in Table 3.

Sex. The two populations are almost identical on this variable.

Age. The target group is considerably older.

Over half (51 percent) of the non-target group is between the ages of sixteen and thirty-four while only 14 percent of the target group is in this younger age category. On the other hand, 57 percent of target population is fifty-five or older compared to 18 percent of the non-target group. In addition, the target population comprises 47 percent and 69 percent of all adults who are fifty-four to sixty-four years old and and sixty-five years or older, respectively.

Table 2

Size Estimates and Match of Jurisdictional and Competency-Based Definitions of Pennsylvania's General ABE Target Population

	Jurisdictional Definition		Total	
Competency Definition	Target %	Non-Target %	Number (000)	%
Target	16	14	2,428	30
Non-Target	11	59	5,693	70
Totals	27	73		100
Number (000)	2,195	5,927	8,122	

Source: Southwest Educational Development Laboratory, 1979.

Table 3

Selected Demographic and Economic Comparisons of
Pennsylvania's General ABE Target and Non-Target Populations

Characteristic	Non-Target Population Number (000)	Non-Target Population Percent	General Target Population Number (000)	General Target Population Percent	Penetration
Total Population	5,960	100	2,722	100	31
Sex					
Male	2,804	47	1,257	46	31
Female	3,154	53	1,464	54	32
Age					
16-24	1,737	29	173	6	9
25-34	1,336	22	214	8	14
35-44	902	15	291	11	24
45-54	928	16	502	18	35
55-64	646	11	612	23	49
65+	412	7	930	34	69
Race					
White	5,560	93	2,399	88	30
Black	378	6	309	11	45
Other	20	--	13	--	39
Last Grade Attended (Attending)					
1-4	--	--	111	4	100
5-8	--	--	421	15	100
9-11	134	2	1,751	64	93
12	210	4	433	16	67
13-15	4,346	73	--	--	--
16	207	3	--	--	--
17+	1,055	17	--	--	--
Occupational Group					
Professional/Manager	1,183	20	84	3	7
Sales/Clerical	1,187	20	114	4	9
Blue Collar	1,292	21	766	28	37
Service Worker	554	9	254	9	31
Farmer	22	1	25	1	53
No Previous Experience	1,716	29	2,478	54	46

- Continued on next page -

Table 3 (Continued)

Selected Demographic and Economic Comparisons of
Pennsylvania's General ABE Target and Non-Target Populations

Characteristic	Non-Target Population Number (000)	Non-Target Population Percent	General Target Population Number (000)	General Target Population Percent	Penetration
Major Activity					
Working	3,166	53	916	34	22
Employed, but not working	134	2	[illegible]	2	29
Looking for work	138	2	58	2	30
Housekeeping	1,208	22	958	35	4[illegible]
At School	691	12	--	--	--
Unable to work	62	1	136	5	69
Retired/Other	454	8	591	22	57
Family Income to Poverty Level:					
Below Poverty	358	6	388	14	52
100-124%	166	3	216	8	57
125-149%	184	3	189	7	51
150+	5,253	88	1,929	71	27

Note: Estimates of 15,000 or less are likely to be very unreliable because they represent fewer than seventeen persons in the sample.

Source: U.S. Bureau of the Census, 1977.

Race. A higher percentage of Blacks is found in the target population than in the non-target population.

Last grade attended or attending. The distribution of this variable is no surprise since it was used to select the target population. Of interest is the educational level of the target population. It shows 4 percent last attended grades one through four and 16 percent last attended grades five through eight. The majority (64 percent) attended grades nine through eleven and 16 percent attempted, but did not complete, the twelfth grade.

Occupational group. Not surprisingly, this comparison reveals that the target groups tend to be under-represented in the professional/managerial and sales/clerical groups, and about equally represented in the blue collar and service worker groups. The most salient feature of the occupational comparison is that 54 percent of target population has no previous work experience, contrasted with 29 percent of the non-target population.

Major activity. Nearly 20 percent less, or 34 percent, of the target population is working compared with 53 percent of the non-target

population. A higher percentage (35 percent) of the target population's major activity is housekeeping, and 22 percent are retired. This latter group represents 60 percent of all adults who are retired, and the target population also represents 69 percent of all adults unable to work. Twelve percent of the non-target population is attending school.

Family income level to poverty. Consistent with their occupational and educational status, 14 percent of target population members live in households with family incomes below the poverty level for 1976. Only 8 percent of non-target group members are in this situation, and 88 percent of this group lives in households with incomes 150 percent above the poverty level. The corresponding percentage for target group members is 71 percent.

DISCUSSION OF SELECTED ISSUES

The basic purpose of this paper has been to develop the necessary concepts and data to form the basis for an analysis of the clarity and feasibility of the Adult Education Act's requirements for identifying and serving its target populations. Within the proposed framework a complete analysis of requirements dealing with identifying and serving target populations, i.e., providing programs, is beyond the scope of this paper, but a first step in this direction will be attempted in this final section.[2] Selected issues will be examined within the broader question of target population identification, including target population trends and participation in adult education programs.

Target Population Trends

Using relatively explicit criteria derived from the language of the Act and its Regulations, and a 1976 U.S. Census data base, this study found approximately 2,721,000 adults identified as Pennsylvania's general Adult Basic Education target population. This population represents 31 percent of all adults over sixteen years old. It is instructive to compare this recent estimate with the widely cited target population based on 1970 Census data.

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[2]The reader is referred to an excellent and frank appraisal of the federal Adult Education Act program which was published by the National Advisory Council on Adult Edcation in 1978 (NACAE, 1978).

Two sources, the National Advisory Council on Adult Education reports for 1974 and for 1977, provide identical estimates for Pennsylvania's ABE target population: 3,561,337. The first report cites the 1970 U.S. Census and the second one cites the 1976 U.S. Census; both are based on "persons sixteen years of age and older not enrolled in school who have not completed high school" (NACAE, 1974, p. 99). This inconsistency of reporting on identical target populations, based on two Census reports differing by six years, can be resolved by assuming the data are from the 1970 Census. A comparison of the target population size based on the current study is shown in Table 4.

Table 4

Two Estimates of the Size of Pennsylvania's General ABE Target Population

Year/Source	Total Population (000)	Population 16+ (000)	Target Population (000)	Penetration
1970 U.S. Census	11,862	8,388	3,561	42%
1976 U.S. Census, SIE	11,670	8,681	2,721	31%
Difference	192	- 293	840	11%

This comparison should be considered only as indicative of the population trends that may be occurring in Pennsylvania, not in an absolute sense. Nevertheless, Pennsylvania's population appears to be growing older; there were an estimated 293,000 more adults age sixteen or older in 1976 than in 1970. The most interesting comparison, however, is the large decrease in the estimated size of the general ABE target population over the six year period. Even though the population appears to be growing older, the target population shows a decrease of 840,000, or 24 percent, since the 1970 U.S. Census figure. The penetration, or percent of the total adult (age sixteen and older) population represented by the target population, shows a corresponding decrease of 11 percent. The message in this trend is clear: the 1980 U.S. Census can be expected to show a sharp reduction in the size of Pennsylvania's ABE target population if the current definitional criteria are used. Also, it is safe to predict that by 1990, 10 years hence, the jurisdictional target population will be even smaller than in 1980 and will represent a lower percent of the adult (age sixteen and older) population.

The rationale for the observed trend between 1970 and 1976, and the projected trend to 1990, is based on structural changes in the United States' public education system over the past century. Between 1870 and 1970 the percentage of persons in the United States graduating from high school increased from 2 to 78 percent (American Education, 1971). Between 1910 and 1970, also on a national level, the educational attainment of adults over age twenty-five changed dramatically. The percent of adults completing less than five years of formal education

decreased from approximately 25 to 5 percent. At the same time, the percent completing twelve to fifteen years rose from about 10 to 45 percent. Median school years completed showed a corresponding increase from 8.1 years to 10.5 years (NCES, 1976, p. 8), and the educational attainment of the adult population has continued to rise since 1970. By 1977, 65 percent of all adults twenty-five years and older had completed at least four years of high school (NCES, 1979, p. 224).

The following age comparison of U.S. adults who had completed at least four years of high school in 1977 (NCES, 1979, p. 224) provides an indication of the reason for the national general ABE target population decline in the past ten years and its continued decline over the next ten years.

Percent of U.S. Adults Completing at Least Four Years of High School by Age Group

Age Group	Percent
25-29	85
30-34	81
35-44	74
45-54	64
55-64	56
65+	37
Total population	65

This comparison clearly indicates that educational attainment is

directly related to age, a fact of which most adult educators are aware, although they may not recognize the strength of the relationship. The above comparison indicates that in a period of approximately thirty-five years, between 1942 and 1977, the percentage of adults 25 years or older who completed at least high school climbed from 37 to 85 percent, a remarkable increase. Conversely, it can be inferred that the percentage of the total adult population who did not complete high school (a rough measure of the ABE target population) has declined sharply. Furthermore, it will continue to decline as the older, less educated population inevitably passes on.

National projections of the size of the decline cannot be made from this cursory examination of trends in educational attainment, and also the trend for Pennsylvania can only be inferred since comparable educational attainment data are not readily available. However, this study indicates that 57 percent of Pennsylvania's general target population is age fifty-five or older, and over one third (34 percent) is sixty-five or older. And it is safe to assume that these adults will continue to age.

A brief mention of Pennsylvania's low educational attainers (not more than four years of formal education) special target population is pertinent to this discussion of trends. It is estimated at 126,000 adults, 84 percent of whom are fifty-five or older, and it comprises 4 percent of the general ABE target population. This group, too, will decline in size and penetration as it ages.

Implicit in the preceding discussion of trends in the size of the national adult basic education program target population is the assumption that Congress has responded in the past to the relatively large number of adults who may be considered "illiterate." If this population is declining, it may become difficult to support the need for more funding for the Act. An obvious alternative to maintain support for the Act, and one which it countenances, is to base the target population definition on competency criteria. However, this study showed that the application of competency-based and jurisdictional criteria to the same data base yielded identification of very similar target populations. This finding may change as the mix of educational attainment and age changes over time.

Participation in Adult Basic Education Programs

Participation in adult education activities is a complex phenomenon, reflecting motivation, opportunity, interest, income, ability, etc. Research (e.g., Cross and Zusman, 1979; Anderson and Darkenwald, 1979) has shown that educational attainment (positive) and age (negative) are the two most influential demographic variables in predicting participation. This last section will use recent data on the relationship between educational attainment and participation in adult education to move toward an understanding and an estimate of the size of the "demand" population for the services of the Adult Education Act. Age is not used in this analysis because no data are available which examine participation in adult education by age for those with less than twelve years of education.

Defining a demand population for ABE programs. The notion of a demand population was introduced earlier in the discussion of the concept of social needs. Recently, this concept has been elevated to a policy level consideration by the National Advisory Council on Adult Education in their report, "An Assessment of the Federal Adult Education Act Program" (NACAE, 1978). This report defines the demand population "as those adults sixteen years of age or older experiencing personal and social disadvantage due to inadequate basic education who actually want, demand, and are capable of using adult education." The report acknowledges that data for assessing this demand are unavailable at this time. It calls for a recognition of this population as well as a system and the resources for assessing the demand population. The following analysis uses data from the 1975 NCES Triennial Survey of participation in adult education activities and from a national educational needs assessment survey to develop a first approximation of the size of this population for Pennsylvania.

This analysis makes three basic assumptions: (1) the demand population size lies between the observed or actual participation rate in adult education activities (lower boundary) and the expressed interest in adult education (upper boundary) for given demographic subgroups, (2) data from national surveys can provide an approximation of the lower and upper boundaries for the demand population which can be applied to Pennsylvania's general ABE target population, and (3) these estimates approximate the demand for a given year. However, it is acknowledged that the estimates are dynamic due to shifts in the age and educational attainment mix of the target population and changes in

economic and social conditions. It should be pointed out that the lower boundary estimated is based on participation in all adult education activities, and hence the demand for adult basic education programs is probably even lower than the estimates calculated.

Table 5 presents the results of the demand population analysis. The data are based on the application of rates (percentages) of participation and interest in adult education activities by educational level to the general ABE target population estimates. Table 5 shows an estimated demand population (adults with less than twelve years of formal education) ranging from 151,000 to 389,000, for all adult education activities for a given year. Demand for ABE programs is probably even lower, and may range from 75,000 to 200,000 if we assume it is about one half of the demand for all adult educational activities. It is seen that demand increases with educational level, lending some credence to the Adult Education Act's interest in the "least educated and hardest to reach" population. However, this interest seems to be overemphasized and misplaced when examined in light of estimated demand population for this group.

ABE Program Demand and Resource Allocation

Given a lower bound estimate of the demand population eight times larger for the group completing grades nine through eleven than for those completing grade eight or less (11,000 versus 88,000), it would seem reasonable to consider anticipated demand when resource allocation decisions are made. Yet, the Act specifies that a state may allocate no more than 20 percent of its Adult Education Act funds for "programs or

equivalency for a certification of graduation from a secondary school.

Table 5

Lower and Upper Boundary Estimates for Pennsylvania's Demand Target Population for Adult Education Programs

Demographic Characteristic	General ABE Target Population Base	Demand Target Population			
		Lower Bound		Upper Bound	
		Participation[a] %	Number	Interest[b] %	Number
Educational Level Completed or Attempted					
0-8	532	2	011	6	031
9-11	1,756	5	088	13	228
12	434	12	052	30	130
Total	2,722		151		389

Note: All numbers in thousands.

a - Participation rate estimates taken from NCES, 1978.

b - Interest rate estimates extrapolated from Carp, Peterson, and Roelfs, 1974, p. 16.

Based on this analysis, the author seriously questions the assertion made by a House of Representatives report in reviewing the history of the Act:

> The needs of those individuals [those who are least educated and most in need of assistance] have not been adequately met to date and now is not the time to loosen up the requirements of the Act to spend more funds on those who are better educated and closer to achieving high school equivalency. (House Report No. 95-1137, p. 128)

This position puts the states in a resource allocation bind, especially when coupled with the Act's expectation that enrollments in ABE programs must continue to increase from year to year.

Indirect support for the author's position on resource allocation for serving the "least educated and most in need" population comes from a recent national study of adult literacy funded by the Ford Foundation and published by McGraw-Hill (St. John Hunter and Harman, 1979). St. John Hunter and Harman correctly perceive that ". . . the pressure on [ABE]program administrators to reach the whole population [54 to 64 million is their estimate] is the result of a failure to make sufficiently clear distinctions among the quite different needs of those within the target group" (St. John Hunter and Harman, 1979, p. 115). They note that, "Potentially, the most serious situation [facing literacy program policy makers] is that of the young who are presently dropping out of high school, among who unemployment rates are highest, who will soon become parents themselves, and who will comprise a substantial proportion of the future adult illiterates" (St. John Hunter and Harman, 1979, p. 110). The solution they recommend is concentration by ABE and similar programs on a specific constituency that finds more

traditional patterns or schooling congenial. This constituency is Group 1, the most highly motivated of their four-fold typology of the continuum of adult illiteracy. For the less motivated and harder to reach adults, they recomend "the establishment of new, pluralistic. community-based initiatives whose specific objective will be to serve the most disadvantaged hard-core poor, the bulk of whom never enroll in any existing program" (St. John Hunter and Harman, 1979, p. 104).

Perhaps the strongest, albeit whimsical, support for the author's position on resource allocation for the most disadvantaged groups comes from Gordon Godbey's notion of "educational triage" (Godbey, 1979). This concept, modeled after a system for medical handling of wounded in time of battle when there are insufficient resources to treat all victims, divides the clients for adult education into three groups. The first third are those who know the value of learning, are fully capable of getting what they want, and will take care of themselves. The lower third are those who, according to the triage system, are either educationally dead or dying and should be left to their own devices, just as the well-educated people at the top level are to be left to their own devices. Educational triage suggests that it is the middle group, among them the middle classes, paraprofessionals, and aspiring younger people, to whom the scarce resources of adult education should be applied. In reality, however, within the spectrum of the ABE target population, it is Group 1, the young, motivated adults in the St. John Hunter and Harman typology, who are denied resources proportional to their numbers in order that ABE programs may serve the lower third of the educational triage.

It is interesting to note that these estimates of the demand population for all adult education range from about 6 (lower bound) to 14 percent (upper bound) of Pennsylvania's General ABE target population. The percentages are even lower (3 to 7 percent) if it is further assumed that the demand for ABE programs is about one half of the total demand for adult education activities.

If the enrollments in Pennsylvania's ABE program are examined in the light of this demand population analysis, they take on a different meaning. The some 32,000 Pennsylvania ABE enrollments for fiscal year 1978-79 (Sebring et al., 1979) now represent about one half of the estimated demand population lower boundary (75,000) rather than about 1 percent of the general ABE target population. By adopting this point of view it becomes easier to develop realistic plans for ABE programs rather than dwelling upon the enormity of the task. Furthermore, it is probable that enrollments in ABE programs would increase if the demand were not artificially controlled by the 20 percent funding restriction for high school equivalency programs.

CONCLUSIONS

This paper has attempted to sift through the ambiguous and absent language of the Adult Education Act and Regulations to present a framework for analyzing the requirements for identifying and serving the Act's target population. It has tried to carefully link concepts and data so that the process described can either be replicated again in Pennsylvania or applied to the 1976 SIE data base for different states. The concepts and process cannot be said to reflect what the Act says about target population, however; they represent only the author's interpretation.

Returning to the primary purpose of this paper, the question of the feasibility of the Act's requirements is closely linked to the Act's clarity. Without clarity, the feasibility of Act's requirements cannot be assessed, and, indeed, the goals for the Act be established and assessed. It should be quite apparent that the author strongly supports the voices (e.g., Comptroller General, 1975; NACAE, 1978) which call for ambiguous criteria for identifying the Act's target populations. Furthermore, the author recommends that such criteria should be empirical and that information on data sources and guidelines for target group identification should be developed at the federal level for use by the states. The USOE paper on the least educated and most in need is viewed as a first step in this direction. A corollary of this recommendation is that the Regulations for the Adult Education Act could take the lead among federal programs aimed at disadvantaged groups, and

begin to develop concepts and procedures for the needs assessment requirement of the Act. It seems safe to conclude that unless the language of the Act and its intended purposes are clarified, the Act's history over the next fifteen years will not differ from the past fifteen.

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